

WHAT IS CLAIMED IS:

1. A method of manufacturing a semiconductor device comprising the steps of:
 - forming a thin film device on a first substrate;
 - 5 bonding a second substrate to the thin film device formed on the first substrate;
 - removing the first substrate, leaving the thin film device on the second substrate;
 - 10 forming an opening portion for reaching the thin film device retained on the second substrate;
 - forming at least one conductive layer contacting the thin film device through the opening portion; and
 - 15 cutting the second substrate so that a bonding portion between the thin film device and the second substrate is removed, and removing the second substrate.
2. A method of manufacturing a semiconductor device according to claim 1, wherein the regions in which the thin film device is formed and regions in which the thin film device is not formed are coated by using at least two types of adhesives separately, and the second substrate is bonded to the surface of the first substrate on which the thin film device is 20 formed.
3. A method of manufacturing a semiconductor device comprising the steps of:
 - forming a first thin film device on one surface of a first substrate;
 - 25 bonding a thin film bonded to the second substrate or a second thin film device to a second substrate;
 - bonding the thin film or the second thin film device bonded to the second substrate to the first thin film device formed on the first substrate;
 - removing the first substrate, leaving the first thin film device on the second substrate;
 - 30 forming an opening portion in the first thin film device retained on the second substrate; and
 - cutting the second substrate so that the a bonding portion between the thin film or the second thin film device and the second substrate is removed, and removing only the second substrate, leaving the thin film or the second thin film device.

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4. A method of manufacturing a semiconductor device according to claim 3, wherein at least one conductive layer is formed on the first thin film device retained on the second substrate.

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5. A method of manufacturing a semiconductor device according to claim 3, wherein locations in which the first thin film device exists and locations in which the first thin film device does not exist are coated separately by using at least two types of adhesives, and the thin film or the second thin film device is bonded to the second substrate.

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6. A method of manufacturing a semiconductor device comprising the steps of:

forming a first thin film device on one surface of a first substrate;

bonding a thin film or a second thin film device to a second substrate;

bonding the thin film bonded to the second substrate or the second thin film

15 device bonded to the second substrate to the first thin film device formed on the first substrate; and

cutting the second substrate so that the a bonding portion between the thin film or the second thin film device and the second substrate is removed, and removing only the second substrate, leaving the thin film or the second thin film device.

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7. A method of manufacturing a semiconductor device according to claim 6, wherein locations in which the first thin film device exists and locations in which the first thin film device does not exist are coated by using at least two types of adhesives separately, and the thin film or the second thin film device is bonded to the second substrate.

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8. A method of manufacturing a semiconductor device according to claim 6, wherein the second substrate is bonded to a polarization film or a polarization plate.

9. A method of manufacturing an active matrix liquid crystal display device
30 comprising the steps of:

forming a first thin film device on one surface of a first substrate;

bonding a thin film or a second thin film device to a second substrate;

introducing liquid crystals between the first thin film device formed on the first substrate and the thin film bonded to the second substrate or the second thin film device

bonded to the second substrate; and

cutting the first substrate, the first thin film device, the second substrate, and the thin film or the second thin film device so that a portion of the first substrate, the first thin film device, the second substrate, and the thin film or the second thin film device is removed, and removing the second substrate, leaving the thin film or the second thin film device.

10. A method of manufacturing a semiconductor device according to claim 9, wherein locations in which the first thin film device exists and locations in which the first thin film device does not exist are coated by using at least two types of adhesives separately, and the thin film or the second thin film device is bonded to the second substrate.

11. A method of manufacturing a semiconductor device according to claim 9, wherein the second substrate is bonded to a polarization film or a polarization plate.

15 12. A method of manufacturing a semiconductor device comprising the steps of:
forming a thin film device on one surface of a first substrate;
forming an electrode on the thin film device;
bonding the thin film device formed on the first substrate to a second substrate;

20 removing the first substrate, leaving the thin film device on the second substrate;

forming an opening portion in the thin film device retained on the second substrate;

25 cutting the second substrate so that the a bonding portion between the thin film device and the second substrate is removed, and removing the second substrate; and
overlapping a plurality of thin film devices obtained by repeating all the preceding steps, and

30 making the electrodes formed on the top and the bottom of the thin film devices conductive.

13. A method of manufacturing a semiconductor device according to claim 12, wherein the regions in which the thin film device is formed and regions in which the thin film device is not formed are coated by using at least two types of adhesives separately, and a second substrate is bonded to the surface of the first substrate on which the thin film device is

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formed.

14. A method of manufacturing a semiconductor device according to claim 12, wherein at least one conductive layer is formed in the opening portion to supply an electrode.

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15. A method of manufacturing a semiconductor device comprising the steps of:

forming a first thin film device on one surface of a first substrate;

forming an electrode on the first thin film device;

bonding a thin film or a second thin film device to a second substrate;

forming an opening portion in the thin film or the second thin film device;

bonding the thin film bonded to the second substrate to the first thin film device formed on the first substrate;

removing the first substrate, leaving the first thin film device on the second

15 substrate;

forming an opening portion in the first thin film device retained on the second substrate;

cutting the second substrate so that the a bonding portion between the thin film or the second thin film device and the second substrate is removed,

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removing only the second substrate, leaving the thin film or the second thin film device; and

overlapping a plurality of thin film devices obtained by repeating all the preceding steps, and

making the electrodes formed on the top and bottom of the thin film devices

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conductive.

16. A method of manufacturing a semiconductor device according to claim 15, wherein the regions in which the first thin film device is formed and regions in which the first thin film device is not formed are coated by using at least two types of adhesives separately, 30 and the second substrate is bonded to the surface of the first substrate on which the thin film device is formed.

17. A method of manufacturing a semiconductor device according to claim 15, wherein at least one conductive layer is formed in the opening portion to supply an electrode.

18. A method of manufacturing a semiconductor device comprising the steps of:
 - forming a thin film device on a first substrate;
 - bonding a second substrate to the thin film device formed on the first substrate;
 - removing the first substrate; and
 - forming an opening portion in the thin film device retained on the second substrate.
19. A method of manufacturing a semiconductor device according to claim 18, wherein at least one conductive layer is formed in the thin film device retained on the second substrate.
20. A semiconductor device using a semiconductor formed on an insulator as an active layer, wherein at least one conductive layer is formed above and below the active layer a material having a resistance to heat equal to or less than 550°C.
21. A thin film transistor using a semiconductor formed on an insulator as an active layer, wherein a gate insulating film is formed on the active layer;
 - a gate electrode is formed on the gate insulating film;
 - a impurity is added using the gate electrode as a mask; and
 - a wiring is formed on the side opposite the gate electrode with respect to the active layer using a material having a resistance to heat equal to or less than 550°C.
22. A semiconductor device comprising:
 - a pair of polarization films;
 - a pixel electrode;
 - a thin film transistor comprising an active layer; a gate insulating film contacted with the active layer; and a gate electrode contacted with the gate insulating film;
 - a wiring connected to the active layer from the gate electrode side;
 - an opposing electrode;
 - liquid crystals between the pixel electrode formed between the pair of polarization films and the opposing electrode;
 - a sealant; and

an orientation film.

23. A semiconductor device according to claim 22, wherein:
 - a third insulating film contacted with the gate electrode;
 - 5 a passivation film contacted with the third insulating film;
 - a wiring electrically connected to each thin film transistors through an opening portion formed in the third insulating film and in the gate insulating film.
24. A method of manufacturing a semiconductor device according to claim 1, wherein
10 the semiconductor device is an active matrix liquid crystal display device.
25. A method of manufacturing a semiconductor device according to claim 3, wherein
the semiconductor device is an active matrix liquid crystal display device.
- 15 26. A method of manufacturing a semiconductor device according to claim 6, wherein
the semiconductor device is an active matrix liquid crystal display device.
27. A method of manufacturing a semiconductor device according to claim 1, wherein
the semiconductor device is an active matrix EL display device.
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28. A method of manufacturing a semiconductor device according to claim 3, wherein
the semiconductor device is an active matrix EL display device.
29. A method of manufacturing a semiconductor device according to claim 6, wherein
25 the semiconductor device is an active matrix EL display device.
30. A semiconductor device using the method of manufacturing a semiconductor
device according to 1.
- 30 31. A semiconductor device using the method of manufacturing a semiconductor
device according to 3.
32. A semiconductor device using the method of manufacturing a semiconductor
device according to 6.

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33. A method of manufacturing a semiconductor device according to claim 1, wherein an active matrix liquid crystal display device is manufactured by performing the steps before the step of removing the second substrate:

5 bonding a second thin film or a third thin film device to a third substrate; introducing liquid crystals between the first thin film device bonded to the second substrate and the second thin film bonded to the third substrate or the third thin film device bonded to the third substrate;

10 cutting the second substrate and the third substrate so that a portion of the second substrate and the third substrate is removed, and removing the second substrate, leaving the thin film or the second thin film device; and

15 removing the third substrate, leaving the second thin film or the third thin film device.

34. A method of manufacturing a semiconductor device according to claim 3, wherein an active matrix liquid crystal display device is manufactured by performing the steps before the step of removing the second substrate:

20 bonding a second thin film or a third thin film device to a third substrate; introducing liquid crystals between the first thin film device bonded to the second substrate and the second thin film bonded to the third substrate or the third thin film device bonded to the third substrate;

25 cutting the second substrate and the third substrate so that a portion of the second substrate and the third substrate is removed, and removing the second substrate, leaving the thin film or the second thin film device; and

30 removing the third substrate, leaving the second thin film or the third thin film device.

35. A method of manufacturing a semiconductor device according to claim 1, wherein an active matrix liquid crystal display device is manufactured by performing the steps before the step of removing the second substrate:

coating locations in which the thin film/the first thin film device exists, and locations in which the thin film/the first thin film device does not exist, separately by using at least two types of adhesives, and bonding a second thin film or a third thin film device to a third substrate;

introducing liquid crystals between the first thin film device bonded to the second substrate and the second thin film, or the third thin film device, bonded to the third substrate;

cutting the second substrate and the third substrate so that a portion of the second substrate and the third substrate is removed, and removing the second substrate, leaving the thin film or the second thin film device; and

removing the third substrate, leaving the second thin film or the third thin film device.

10 36. A method of manufacturing a semiconductor device according to claim 3, wherein an active matrix liquid crystal display device is manufactured by performing the steps before the step of removing the second substrate:

coating locations in which the thin film/the first thin film device exists, and locations in which the thin film/the first thin film device does not exist, separately by using at least two types of adhesives, and bonding a second thin film or a third thin film device to a third substrate;

introducing liquid crystals between the first thin film device bonded to the second substrate and the second thin film, or the third thin film device, bonded to the third substrate;

20 cutting the second substrate and the third substrate so that a portion of the second substrate and the third substrate is removed, and removing the second substrate, leaving the thin film or the second thin film device; and

removing the third substrate, leaving the second thin film or the third thin film device.

25 37. A method of manufacturing an active matrix liquid crystal display device according to any one of claim 1, wherein:

portions of the first substrate remain and are used as spacers of the liquid crystal display device in the step of removing the first substrate.

30 38. A method of manufacturing an active matrix liquid crystal display device according to any one of claim 3, wherein:

portions of the first substrate remain and are used as spacers of the liquid crystal display device in the step of removing the first substrate.

39. A method of manufacturing an active matrix liquid crystal display device according to any one of claim 6, wherein:

portions of the first substrate remain and are used as spacers of the liquid crystal display device in the step of removing the first substrate.

40. An active matrix liquid crystal display device is manufactured using the method of manufacture according to claim 1.

10 41. An active matrix liquid crystal display device is manufactured using the method of manufacture according to claim 3.

42. An active matrix liquid crystal display device is manufactured using the method of manufacture according to claim 6.

15 43. An active matrix EL display device is manufactured using the method of manufacture according to claim 1.

44. An active matrix EL display device is manufactured using the method of manufacture according to claim 3.

45. An active matrix EL display device is manufactured using the method of manufacture according to claim 6.

25 46. A semiconductor device is manufactured using the method of manufacturing the semiconductor device according to claim 12.

47. A semiconductor device is manufactured using the method of manufacturing the semiconductor device according to claim 15.

30 48. A method of manufacturing a semiconductor device according to claim 18, wherein the semiconductor device is a self light emitting display device.

49. A method of manufacturing a semiconductor device according to claim 18,

wherein the semiconductor device is a transmission type display device.

50. A method of manufacturing a semiconductor device according to claim 18,
wherein the semiconductor device is a reflection type display device.

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51. A method of manufacturing a semiconductor device according to claim 18,
wherein the semiconductor device is an active matrix liquid crystal display device.

52. A method of manufacturing a semiconductor device according to claim 18,
10 wherein the semiconductor device is an active matrix EL display device.

53. A method of forming a semiconductor device according to claim 18, wherein the
semiconductor device is an integrated circuit using SOI (silicon on insulator) structure
elements.

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54. An integrated circuit having the thin film transistor according to claim 21.

55. A semiconductor device according to claim 23, wherein the active layer is formed
in a layer between the pixel electrode and the gate electrode.

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